

- Final Report -

**Gastrointestinal Outbreak
Church Potluck - Hebron, IL
April 2000**

**Investigation by:
McHenry County Department of Health
2200 N. Seminary Ave.
Woodstock, IL**

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INTRODUCTION

On May 2, 2000, at approximately 9 00 am, the Communicable Disease Section of the Nursing Division received an individual report of one person who was hospitalized and was experiencing bloody diarrhea. This individual had attended a potluck dinner at a local church on April 30, 2000. During the initial interview with that individual, it was discovered that there were other people who had attended the potluck dinner who were experiencing similar symptoms. The Department's investigation that ensued identified twenty-eight (28) individuals from 20 families who were experiencing similar gastrointestinal symptoms including diarrhea, abdominal cramping, nausea, and malaise.

This report will review the methodology utilized in this investigation, the final findings, and a discussion of those findings and recommendations to prevent future illness. The appendices include graphs and tables depicting data from the epidemiological and environmental investigations and laboratory testing along with the various forms used to conduct and organize the data/information received in the field.

METHODS

A foodborne illness investigation includes obtaining case histories of those ill and those who are well, but still potentially at risk because of a shared exposure with the ill. It is also necessary to obtain clinical specimens to identify an etiologic agent for the illness. From these preliminary efforts, a case definition is developed to appropriately classify individuals interviewed as either a case or a non-case. The statistical significance of testing in this program helps us to determine what food exposures could be related to disease. The most common statistical testing in the outbreak setting is the chi-square test, the definition being a chi-square larger than 3.84 is significant and corresponds to a p-value smaller than 0.05. A relative risk greater than 2 is also statistically significant in determining the foods in question. The chi-square test works well if the number of people in the test is greater than or equal to 30. Paralleling this

epidemiological investigation is an environmental health investigation that includes the physical and procedural examination of pertinent operations and the collecting of food samples of implicated food items. The next stage of the investigation includes the development of hypotheses about the contributing factors to the illness and the examination of associations that develop from the data that has accumulated from the environmental, epidemiological and laboratory findings. Following this, recommendations and control procedures are developed to prevent future illness.

The epidemiological investigation began on May 2, 2000 after receiving an individual report of one person who was hospitalized and experiencing gastrointestinal illness. A phone conference was held between the Communicable Disease Coordinator and the Field Staff Supervisor. This meeting shared information and established an initial response strategy for the epidemiological and environmental investigations.

On May 2 – 8, 2000, the Communicable Disease Section staff conducted case histories interviews at which time the case definition was established. Twenty-eight (28) ill and three (3) well were interviewed using a questionnaire developed by Communicable Disease and Environmental Health staff specifically for this incident. A total of thirty one (31) attendees were interviewed. As groups of interviews were completed, clerical staff entered the data directly into the EPI INFO software that was utilized for the development of the questionnaires specific to the investigation (See Appendix D). Periodic analysis of the expanding picture of the outbreak helped to more clearly focus the epidemiological, sample collection and environmental investigations. A thorough analysis was conducted of all interview data utilizing the fully relational database aspects of the EPI INFO software. This examination included cross tabulations of exposure information versus the well and ill, incubation time between exposure and becoming ill, and the duration of symptoms. These factors can be examined

in more detail in Appendix A. Stool samples from some of those reporting illness were collected for analysis

The Environmental Division responded by sending an Environmental Health Practitioner to the local church, on May 3, 2000, to observe the facilities and review food handling procedures and practices, and to request the retention of any food products that may have been involved in the event that may be onsite. Staff requested the contact names and phone numbers of additional participants and a list of food items which were served at the event.

A water sample was collected for analysis.

On May 4, 2000, Environmental staff made phone contact with the individual who had prepared the turkey, stuffing and gravy for the event. Utilizing a Hazard Analysis and Critical Control Point (HACCP) approach, the Environmental Health Practitioner reviewed, in detail, the food handling steps associated with the preparation of these food items.

On May 4, 2000, samples of the leftover turkey and stuffing, from the April 30, 2000 potluck, were obtained for analysis, from the home of the individual who had prepared them. To expedite receipt of laboratory results, and to evaluate the consistency of those results, split samples of the turkey and stuffing were sent to two (2) separate laboratories.

Throughout the investigation, the foodborne illness investigation team met to review the progress of the investigation and to continually refocus staff efforts based upon the most recent information from the ongoing investigation.

FINDINGS

There were twenty-eight (28) individuals identified in the outbreak investigation that developed illness associated with the consumption of food at the church.

potluck The **case definition** that was developed for this outbreak specified that **a case would be someone who attended the church potluck dinner on April 30, 2000, and consumed a potluck dinner between 11:30 am and 1:00 p.m., and became ill four (4) to fourteen (14) hours after eating, with symptoms of abdominal cramps, nausea and/or diarrhea persisting at least ten (10) hours.** Twenty-eight (28) ill and three (3) well were interviewed utilizing the EPI INFO questionnaire The illness was characterized by diarrhea (100%), abdominal cramping (51%) and nausea (19%) (See Appendix A) The duration of symptoms averaged twenty-seven point three (27.3) hours with a range of ten (10) hours to ninety-six (96) hours The incubation period averaged seven point three (7.3) hours with a range of four (4) hours to fourteen (14) hours (See epidemiological findings – Appendix A) These symptoms, incubation time and duration are typical to several foodborne pathogens An examination of foodborne pathogens is provided in Appendix A Examination of gender of those ill and not ill did not reveal any association with the development of illness or persistence of symptoms

Because of the low numbers of well individuals in the study, there were no significant statistical results in regard to chi square, p-value and relative risk values. Therefore the attack rates of the food items were utilized to determine implicated food items (See Appendix A) The attack rate for those who had eaten the turkey was ninety percent (90%) No one who had not eaten the turkey exhibited signs or symptoms of illness The implicated food item for this outbreak was the turkey

All three (3) stool samples submitted for analysis were positive for *Clostridium perfringens*

The water sample was negative for coliform bacteria.

The stuffing sample was negative for *Bacillus cereus*. Two hundred (200) colony forming units per gram of *Clostridium perfringens* were found in the stuffing. The standard plate count for the stuffing was three hundred (300) colony-forming units per gram.

The turkey sample was negative for *Bacillus cereus*. Fifty-three thousand (53,000) to one million two hundred thousand (1,200,000) colony forming units per gram of *Clostridium perfringens* were found in the turkey samples. The standard plate count for the turkey was one hundred thousand (100,000) colony forming units per gram.

DISCUSSION

The pathogen for this outbreak was *Clostridium perfringens*. *Clostridium perfringens* is a spore forming anaerobic bacterium which causes an intestinal disorder characterized by sudden onset of colic followed by diarrhea, nausea is common, but vomiting and fever are usually absent. The incubation period is from six (6) to twenty-four (24) hours, usually ten (10) to twelve (12) hours. The disease is typically short in duration; usually less than one (1) day. The reservoir for *Clostridium perfringens* is soil and the intestinal tract of healthy people and animals. Food intoxication caused by *Clostridium perfringens* is associated with ingestion of food that was contaminated by soil or feces and then held under conditions that permit multiplication of the organism. Almost all outbreaks are associated with failure to cool cooked meats promptly or adequately. Spores survive normal cooking temperatures, germinate and multiply during slow cooling, storage at ambient temperature and/or inadequate reheating. The toxin is produced during sporulation in the small intestine.

Clostridium perfringens can be found in approximately fifty percent of raw or frozen meat; the turkey may have been contaminated with *Clostridium perfringens* when it was purchased. The pathogen may also have been introduced into the food via the food handler (inadequate handwashing) or

through cross contamination (i.e. soil vegetables, other meat, etc.) during preparation.

The Environmental investigation did identify several deficiencies in the preparation of the turkey which would allow for the rapid multiplication of *Clostridium perfringens* (See Appendix C). The turkey, stuffing and gravy were prepared approximately forty-eight (48) hours in advance of the event, requiring cooking, cooling, and reheating prior to service. The temperature of the turkey was not verified with a metal stemmed thermometer after cooking. The turkey was large (approximately 20 lbs.), and was still partially frozen when the giblets were removed. It is likely that the internal temperature of the turkey did not reach a high enough temperature to destroy the *C. perfringens* spores. This was compounded by attempting to cool the turkey, whole. The large, covered, whole turkey would have been well insulated, even under refrigerated conditions, which would inhibit the cooling process. It has been the Department's experience with cooling large quantities of food that the food items can remain at unsafe internal temperatures (41 degrees F to 140 degrees F) for well over twenty-four (24) hours. In addition, other hot foods (stuffing and gravy) were added to the refrigerator simultaneously, which would likely have raised the temperature of the interior of the refrigerator, and resulted in longer cooling times. The typical domestic refrigerator is not designed to rapidly cool down large quantities of hot food.

Finally the turkey with gravy and stuffing were reheated slowly, over a six (6) hour period. These foods likely remained at unsafe temperatures for an extended period of time again, allowing the rapid multiplication of *Clostridium perfringens*, which can double in number every ten (10) minutes under optimal conditions. Temperatures of the foods were not taken prior to service. The foods did not reach a high enough internal temperature to destroy the pathogen.

The range in the positive results of *Clostridium perfringens* is not to be unexpected. The sample represented several small and large pieces of turkey. It cannot be assumed that the pathogen would be equally present throughout the product.

The standard plate count is one of the tests typically completed by the Illinois Department of Public Health Laboratory, and is an indication of the overall bacterial levels in the food product. It should not be assumed that all of the bacteria are pathogenic, but it can be an indication of general contamination of a food product. The Illinois Department of Public Health has established a maximum acceptable limit of fifty thousand (50,000) colonies per ml (standard plate count) for pasteurized soft serve mix.

Based upon the epidemiological, environmental and laboratory results, it was determined that the pathogen for this outbreak was *Clostridium perfringens*, and the implicated food item was the turkey. It is the opinion of the Department that the slow cooling and reheating of the turkey over the forty-eight (48) hour period prior to the potluck, provided prime conditions for the growth of *Clostridium perfringens*, resulting in the illness.

CORRECTIVE ACTION:

The Department recommends that the following corrective actions be implemented in addition to the specific foodhandling recommendations outlined in Appendix C, to prevent a recurrence in the future.

- Consideration should be given to designating one person to oversee future church potluck events. It is recommended that this individual become a Certified Foodservice Manager and provide direction to participants preparing and handling potentially hazardous foods. Preparation of large quantities of potentially hazardous foods requires special considerations due to the limited physical facilities that are usually present in an individual's home.

- The Department's Potluck brochure, with recommendations for safe foodhandling, should be provided to all participants who will be preparing foods for future potluck events

SUMMARY

Of the thirty-one people investigated, who attended the local church potluck dinner on April 30, 2000, twenty-eight individuals were identified as ill after eating the turkey. This is an attack rate of ninety percent (90 %). The symptoms of those ill included abdominal cramps, nausea and/or diarrhea. Individuals became ill four (4) to fourteen (14) hours after eating. The duration of symptoms ranged from ten (10) to ninety-six (96) hours.

Laboratory analysis of the stool samples from the ill individuals, and of the leftover turkey were positive for the bacteria *Clostridium perfringens*. The epidemiological and environmental investigations confirmed that the illness was caused by *Clostridium perfringens*, which was present in the turkey. The turkey was cooled very slowly and reheated very slowly which allowed the bacteria to multiply to a level which caused the illness.

Potluckdinner2000 doc/0/nursing/cd/foodborne

Appendix A

Epidemiological Findings

**ATTACK RATE
CHURCH POTLUCK
FOODBORNE ILLNESS INVESTIGATION - APRIL 2000**

	ATE FOOD				NOT ATE				
FOOD ITEM	ILL	NOT ILL	TOTAL	%ILL	ILL	NOT ILL	TOTAL	%ILL	DIFFERENCE
Turkey	28	3	31	90%	0	0	0	0	90%
Gravy	19	2	21	90%	9	1	10	90%	0%
Stuffing	23	2	25	92%	5	1	6	83%	9%
Mashed Potatoes	25	3	28	89%	3	0	3	100%	-11%
Mixed Vegetables	18	3	21	86%	10	0	10	100%	-14%
Deviled Eggs	8	1	9	89%	20	2	22	91%	-2%
Fruit Salad	6	0	6	100%	22	3	25	88%	12%
Rolls	18	1	19	95%	10	2	12	83%	12%
Cookies	8	0	8	100%	20	3	23	87%	13%
Smoeres	7	0	7	100%	21	3	24	88%	12%
Coffee	9	0	9	100%	19	3	22	86%	14%
Water	2	0	2	100%	26	3	29	90%	10%

church:potluckattackrate/o/excel/cd/foodborne

Possible Etiologic Agent
Church Potluck
Foodborne Illness investigation
4/30/2000

AGENT	INCUBATION PERIOD	DURATION	SYMPTOMS	FOODS INVOLVED
CLOSTRIDIUM PERFRINGENS	6 – 24 hours	24 hours	Diarrhea, Nausea	Inadequately heated or reheated meats and gravies
B. CEREUS	1 – 6 hours	24 hours	Nausea/vomiting or diarrhea	Food kept at ambient temperature after cooking, especially rice
VIBRIO PARAHAEMOLYTIC US	12 - 24	1 – 7 days	Nausea and vomiting	Raw seafood
SHIGELLA	1 – 7 days	Variable	Abdominal cramps, fever, chills, diarrhea, watery stools, tenesmus, lassitude, prostration, nausea, vomiting	Moist mixed food, potato, shrimp, tuna, salads, turkey and milk

Duration of Symptoms
Church Potluck
Foodborne Illness Investigation
4/2000

Mean	27.3 hours
Median	17 hours
Mode	12, 24 hours
Range	10 – 96 hours

Incubation Period of III
Church Potluck
Foodborne Illness Investigation
4/30/2000

Mean	7.35 hours
Median	7.5 hours
Mode	8 hours
Range	4-14 hours

Percent III by Group
Church Potluck
Foodborne Illness Investigation
4/30/00

Group	Known Attendance*	Known III	% III
Potluck dinner	34	28	90 %

*** 3 out of 34 persons were not interviewed.**

church_potluck/word/food/env123/o

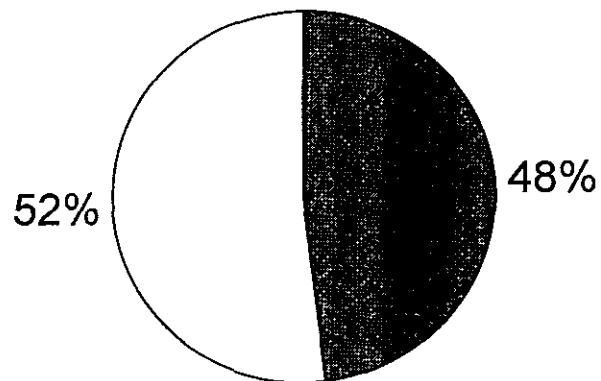
FOODBORNE ILLNESS INVESTIGATION

04/30/2000

CHURCH POTLUCK

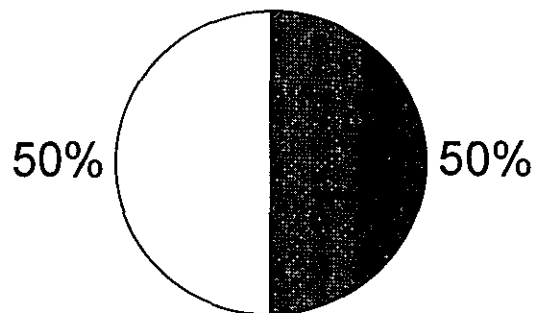
GENDER RATIO

ILL



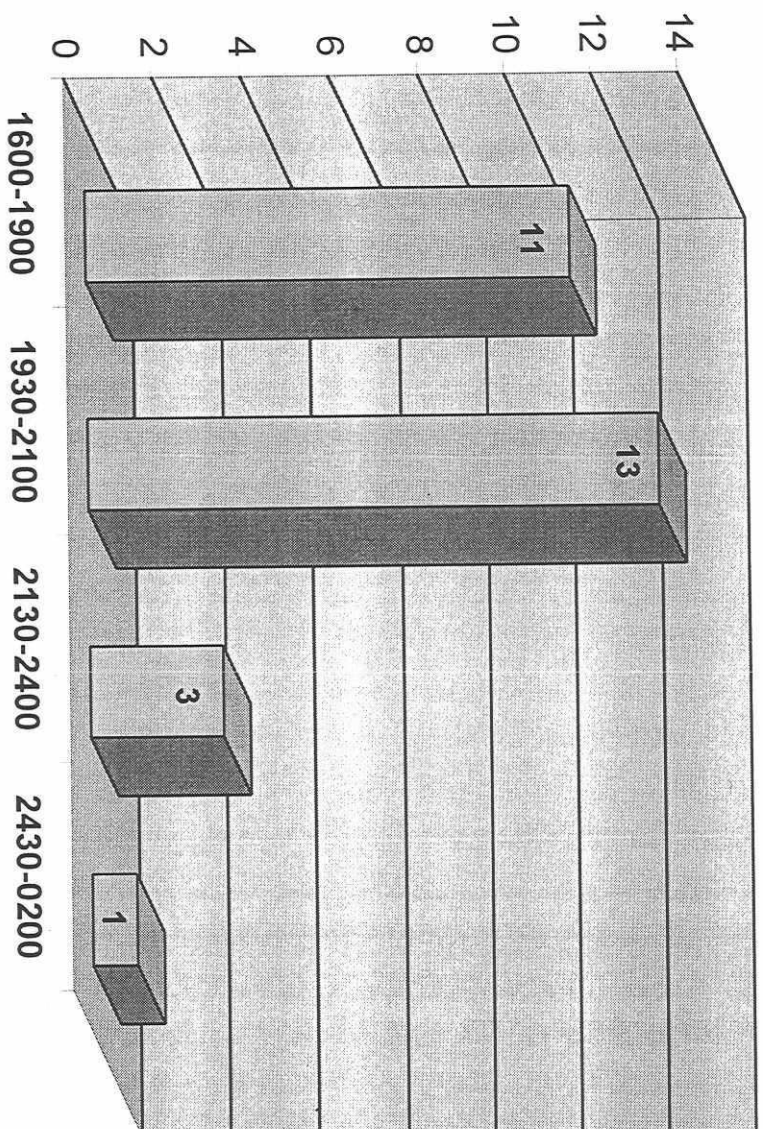
■ Female
□ Male

NOT ILL



■ Female
□ Male

CHURCH POTLUCK Time of Onset Chart

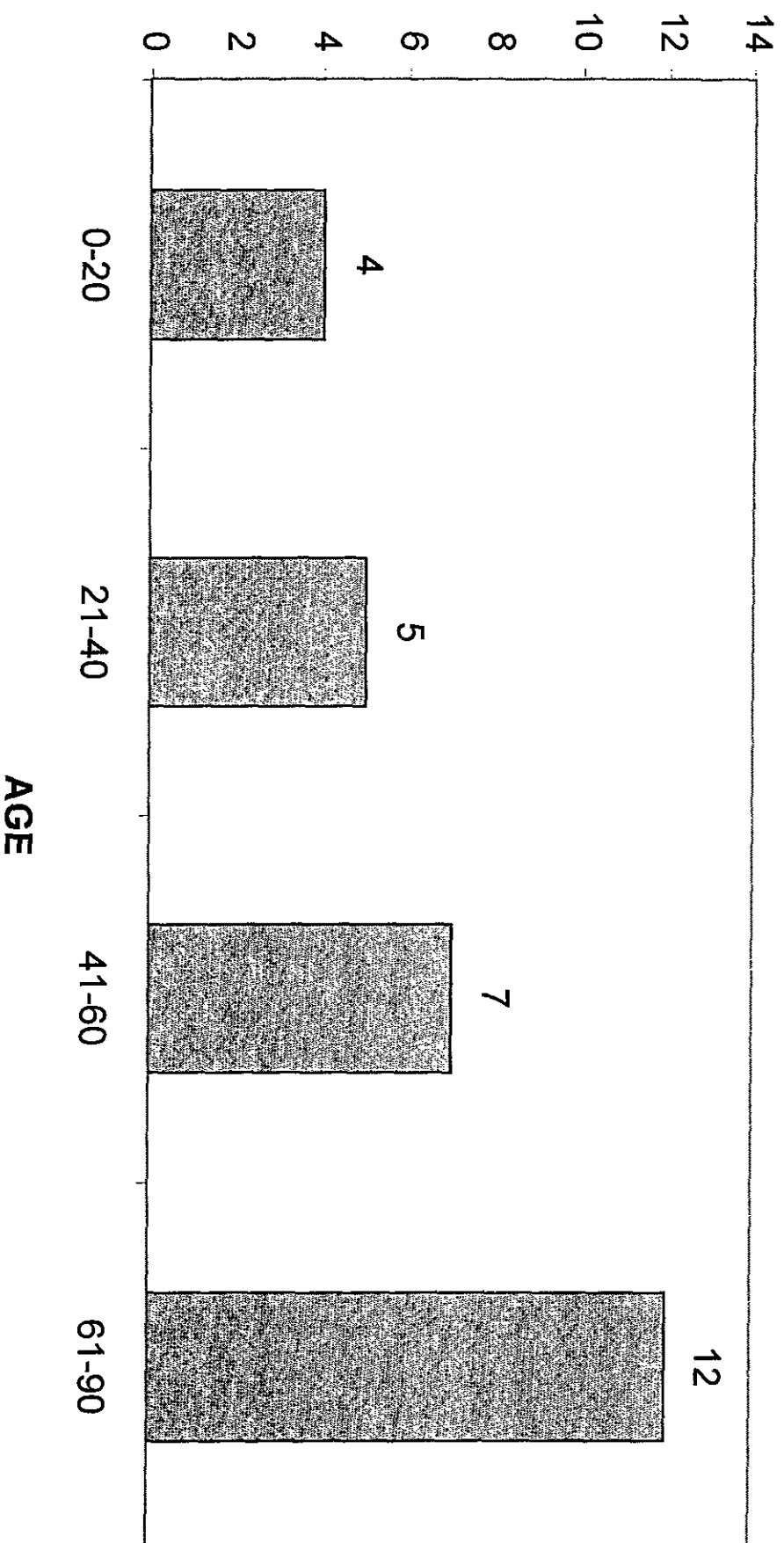


☐ April 30th - May 1, 2000

CHURCH POTLUCK FOODBORNE ILLNESS INVESTIGATION - 4/30/200 - POTLUCK DINNER
FREQUENCY OF SYMPTOMS



Church Potluck Foodborne Illness Investigation
4/30/2000
Age Comparison To Illness



Appendix B

Laboratory Findings



McHENRY COUNTY DEPARTMENT OF HEALTH
McHENRY COUNTY GOVERNMENT CENTER
AUXILIARY BUILDING
2200 N SEMINARY AVENUE - ROUTE 47 N
WOODSTOCK, ILLINOIS 60098
TELEPHONE 815-334-4510
FAX 815-338-7661

MCDH

Drinking Water Analysis Report
Standard Drinking Water Analysis

Source Address:

[REDACTED]

Mailing Address:

[REDACTED]

Collected By: D GUIF

LAB NUMBER **71434**

Illinois Department of Public Health Registry Number. 17539

Illinois EPA Laboratory Number IL00083

Sample Information:

Date/Time Collected 05/03/00 2:30 PM

Well Information:

ft.

Status - Purpose **SANITARIAN REQUEST - FOODBORNE**

NEW WELL NO

NON-COMM FACILITY NO

RESULTS PER 100 mL		OPINION
TOTAL COLIFORM BACTERIA		SATISFACTORY
☐ Membrane Filter	NOT PRESENT	
☒ Colilert (MMO-MUG) NN		
FECAL COLIFORM BACTERIA		
E COLI	NOT PRESENT	
HETEROTROPHIC PLATE COUNT		cfu/10mL

Your water sample is satisfactory and is bacteriologically safe for consumption
The Department recommends having your well water tested annually for coliform bacteria and nitrate

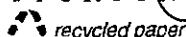
RESULT mg/L	OPINION
NITRATE	
☐ SCREEN AQUACHECK METHOD	
☐ QUANTITATIVE, ORION 601 METHOD	
MCL = 10.00 mg/L	
NITRITE	
☐ SCREEN, AQUACHECK METHOD	
☐ QUANTITATIVE, SM 4500 NO2-B	
MCL = 1.00 mg/L	

Residual Chlorine Analysis:	RESULT	Remarks:
☐ Free Chlorine, SM 4500 Cl ₂		
☐ Total Chlorine, SM4500 Cl ₂		

Date/Time Received	05/03/00 2:50 PM
Received By	DG
Date Reported Out.	05/04/00
Run Analyst:	KW
Read Analyst:	KW
Reported Out By	<i>[Signature]</i>

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AN EQUAL OPPORTUNITY EMPLOYER



Analytical Test Report

MCHENRY COUNTY DEPT OF HEALTH
2200 N SEMINARY AVE RTE 47N
WOODSTOCK, IL 60098
ATTN PATRICIA M NOMM

ACCOUNT 617
COPY 1
DATE 05/08/2000

LAB IDEE # 10505990336
SAMPLE CODE -N/G-
LOT NUMBER -N/G-
DATE RECEIVED 05/05/2000
P O NUMBER -N/G-
SUBMITTER PATRICIA M NOMM

DESCRIPTION STUFFING

REQUEST # -N/G-

TEST NAME/METHODOLOGY	RESULT	UNITS
CLOSTRIDIUM PERFRINGENS COUNT Method FDA BAM	<10	COLONY FORMING UNITS PER GRAM
BACILLUS CEREUS (SCREEN) Method. FDA BAM	<10	COLONY FORMING UNITS PER GRAM

FAXED REPORT
Method TRANSMISSION

COMPLETED 05/08/2000

Reviewed By



-END OF REPORT-

Certification IL DPH #17581
Number USDA/FSIS - Salmonella & Listeria #0164
USDA/FSIS - Chemistry #1761

RECEIVED

MAY 11 2000

**MCHENRY COUNTY
DEPT. OF HEALTH**

Analytical Test Report

MCHENRY COUNTY DEPT OF HEALTH
2200 N SEMINARY AVE RTE 47N
WOODSTOCK, IL. 60098
ATTN: PATRICIA M.NOMM

ACCOUNT · 617
COPY · 1
DATE · 05/10/2000

LAB IDEE # · 10505990335
SAMPLE CODE · -N/G-
LOT NUMBER : -N/G-
DATE RECEIVED· 05/05/2000
P O NUMBER · -N/G-
SUBMITTER : PATRICIA M NOMM

DESCRIPTION TURKEY

REQUEST # · -N/G-

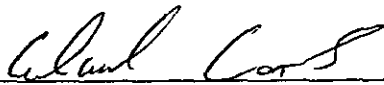
TEST NAME/METHODOLOGY	RESULT	UNITS
CLOSTRIDIUM PERFRINGENS COUNT Method FDA BAM	53,000	COLONY FORMING UNITS PER GRAM
BACILLUS CEREUS (SCREEN) Method. FDA BAM	<10	COLONY FORMING UNITS PER GRAM

FAXED REPORT
Method: TRANSMISSION

COMPLETED 05/10/2000

J

Reviewed By



-END OF REPORT-

Certification Number IL DPH #17581
USDA/FSIS - Salmonella & Listeria #016-
USDA/FSIS - Chemistry #1761

DO NOT USE FOR ROUTINE DART OR ROUTINE WATER COLIFORM

05/10/00

ILLINOIS DEPARTMENT OF PUBLIC HEALTH
DIVISION OF LABORATORIES
DAVID F. CARPENTER, PhD
DIVISION CHIEF

000405 MAY-5-00

FOR LABORATORY USE ONLY
David F. Carpenter

NOTE : ONE SAMPLE PER FORM

MICROBIOLOGY

SUBMITTED BY

-FOR SUBMITTING AGENCY USE ONLY

AGENCY NAME

McHenry County Department of Health

STREET ADDRESS

2200 N. Seneca Ave

CITY

Woodstock

ZIP CODE

60098

TELEPHONE

815-334-4585

LAB. No.

DATE RCVD.

TIME RCVD.

RCVD. BY

MAIL

MESSENGER

PROGRAM CODES:

SUBMITTER, PLEASE COMPLETE

FOOD

DAIRIES

WATER

OTHER



FACILITY ID #:

PERMIT #:

NAME:

Dawn Burt

ID #:

DATE COLLECTED:

5-4-00

TIME 2:00 PM

SIGNATURE

SAMPLE DESCRIPTION / REMARKS

Sewage

ANALYSIS REQUESTED

Bacillus Colitridum Protegens

DO NOT WRITE BELOW THIS LINE. FOR LABORATORY USE ONLY

REPORT OF FINDINGS

ANALYTE	RESULTS	CODE	REMARKS
Standard Plate Count/g	300 ^{est}		
Clostridium perfringens/g	200		
Coliforms-MPN	43		
E.coli-MPN	<3		
Bacillus cereus/g	NOT FOUND		

CODES

112 - QMR
123 - NOT ANALYZED, LAB ACCIDENT
124 - ANALYSIS NOT OFFERED
125 - SPECIMEN IN TRANSIT
126 - SAMPLE TOO OLD
127 - IMPROPER SAMPLE

DATE COMPLETED

MAY 10 2000

ANALYST

CAR

CR

SPR

SUPERVISOR

DO NOT USE FOR ROUTINE DAIRY OR ROUTINE WATER COLIFORM

ILLINOIS DEPARTMENT OF PUBLIC HEALTH
DIVISION OF LABORATORIES
DAVID F. CARPENTER, PhD
DIVISION CHIEF

NOTE: ONE SAMPLE PER FORM

MICROBIOLOGY

SUBMITTED BY	FOR SUBMITTING AGENCY USE ONLY		LAB. No.	
AGENCY NAME	McHenry County Department of Health		DATE RCVD.	
STREET ADDRESS	2200 W. Seminary Ave		TIME RCVD.	
CITY	Woodstock	ZIP CODE	60078	RCVD. BY
TELEPHONE	815-334-4585		MAX	MESSENGER
PROGRAM CODES:				

SUBMITTER, PLEASE COMPLETE

FOOD

DAIRIES

WATER

OTHER



FACILITY ID #:

PERMIT #:

NAME:

ID #:

COLLECTED BY:

DATE COLLECTED:

TIME 2:00 PM

SIGNATURE

SAMPLE DESCRIPTION / REMARKS

Turkey

ANALYSIS REQUESTED

Bacillus Clostridium perfringens

DO NOT WRITE BELOW THIS LINE. FOR LABORATORY USE ONLY

REPORT OF FINDINGS

ANALYTE	RESULTS	CODE	REMARKS
Standard Plate Count/g	100,000		
Clostridium perfringens/g	1,200,000		
Coliforms - MPN	>1100		
E. coli - MPN	43		
Bacillus cereus/g	NOT FOUND		

CODES

111 = ONE
222 = NOT ANALYZED, LAB ACCIDENT
333 = ANALYSIS NOT OFFERED
444 = ANALYSIS IN PROGRESS
555 = SAMPLE TOO OLD
666 = IMPROPER SAMPLE

DATE COMPLETED

ANALYST

MAY 10 2000

CAR

CH

SPR

SUPERVISOR

W

STOOL SAMPLE RESULTS

CHURCH POTLUCK

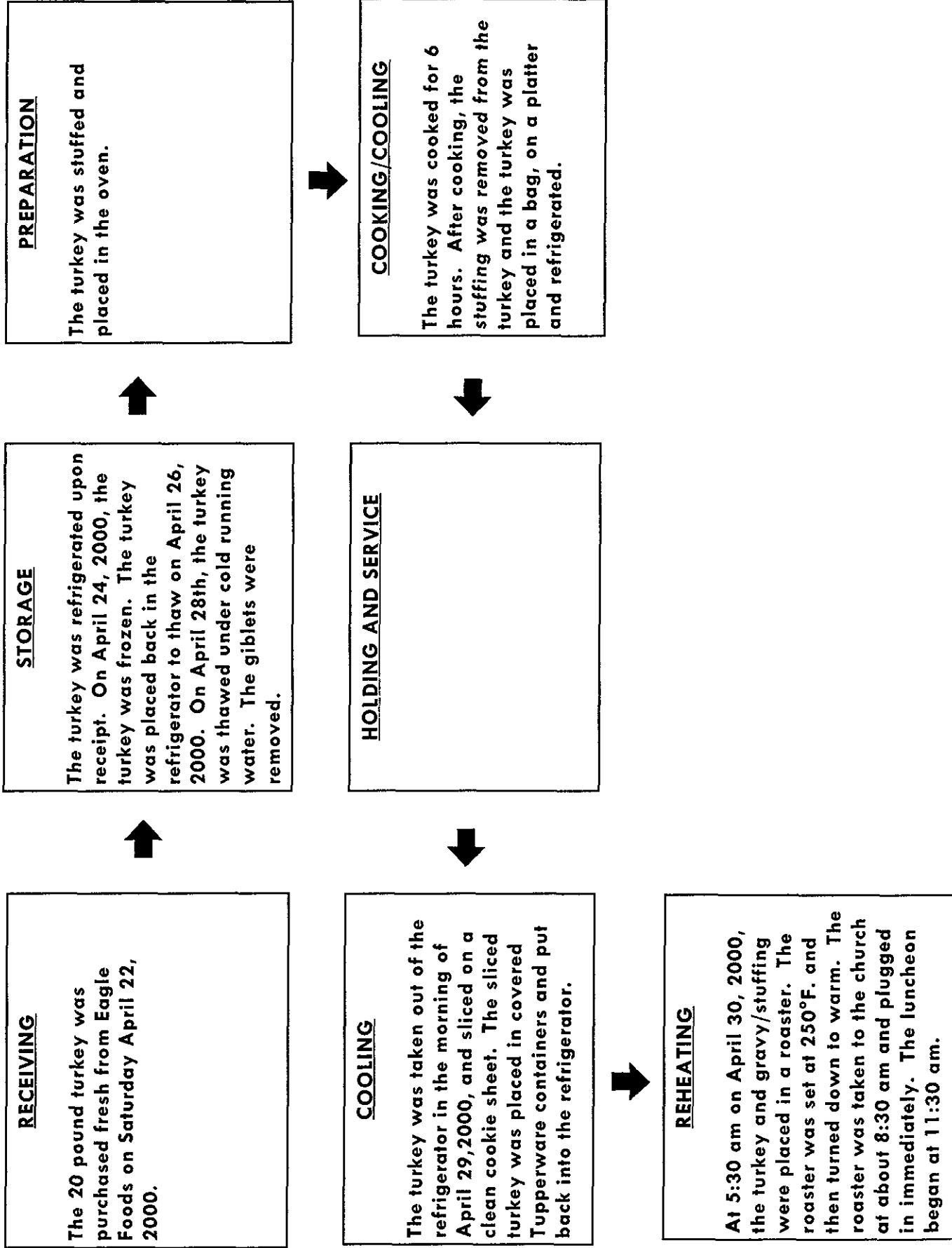
APRIL 2000

Sample Number	Staph. aureus	Bacillus cereus	Clostridium perfringens	Salmonella	Shigella	Campylobacter	E. coli 0157:H7
1	Negative	Negative	Positive	Negative	Negative	Negative	Negative
2	Negative	Negative	Positive	Not analyzed	Not analyzed	Not analyzed	Not analyzed
3	Negative	Negative	Positive	Not analyzed	Not analyzed	Not analyzed	Not analyzed

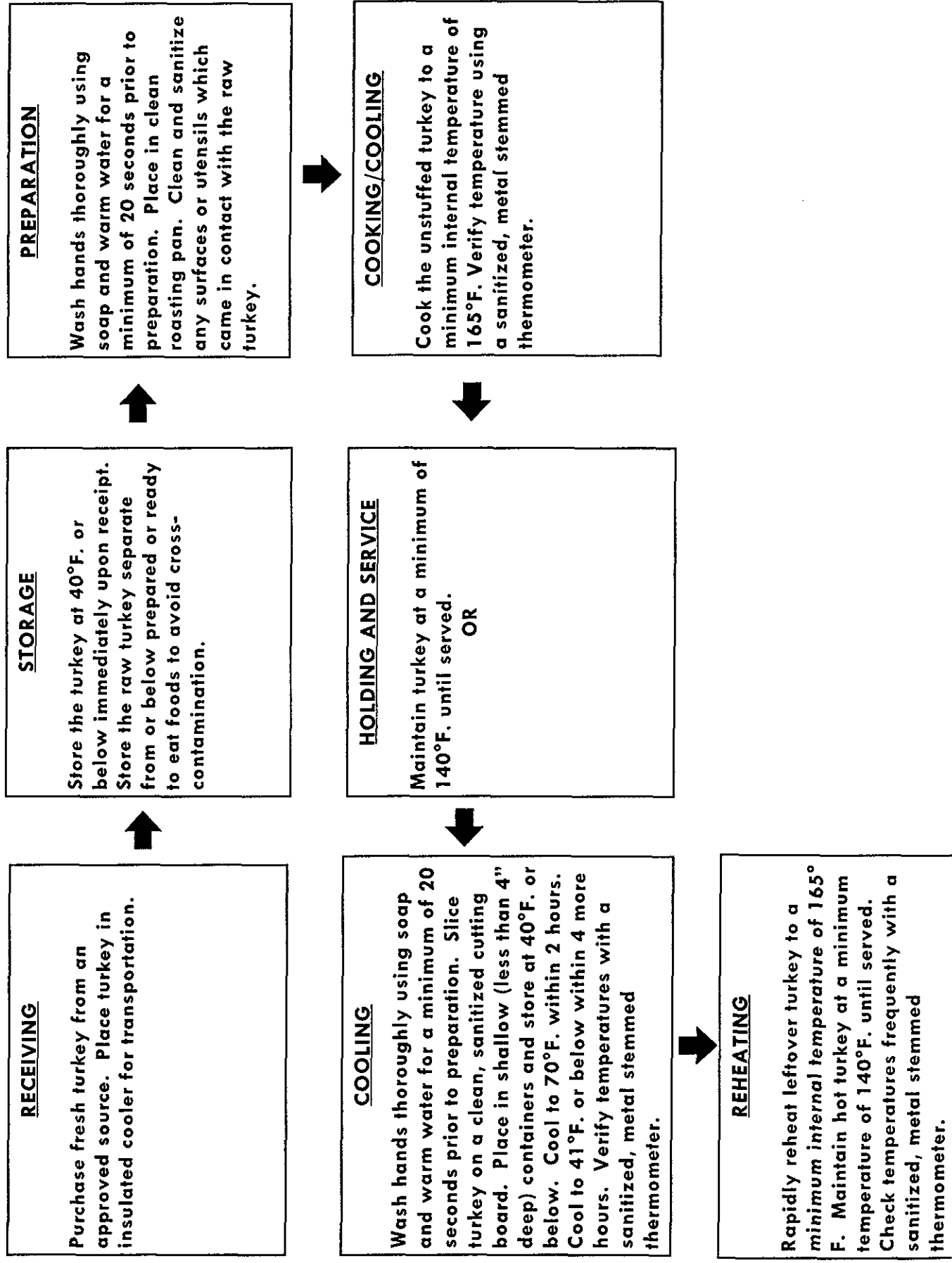
Appendix C

Environmental Findings/Recommendations

PRODUCT FLOW CHART – TURKEY CHURCH POTLUCK



HACCP PRODUCT FLOW CHART – TURKEY CHURCH POTLUCK



**CHURCH POTLUCK
PROBLEMS/RECOMMENDATIONS
APRIL 2000
PAGE ONE**

Problem 1:

Potentially hazardous foods prepared far in advance of service (more than 12 hours)

Corrective Action:

Whenever possible, potentially hazardous foods should be prepared immediately prior to service to minimize the need to cool and reheat foods. Potentially hazardous foods should pass through the danger zone (41 degrees F to 140 degrees F) as quickly and as few times as possible.

Reason:

Since any temperature between 41 degrees F and 140 degrees F present a hazard to public health in terms of microbial growth, food must pass through the critical temperature zone as little and as quickly as possible to minimize the potential for microbial growth.

Problem 2:

Large quantities of potentially hazardous foods prepared at a time

Corrective Action:

The amount of food preparation should be limited to the available workspace, hot and cold food storage capacities, ability to properly cool foods, etc. Whenever possible food should be prepared in small batches to facilitate more control over the critical control points in the process (temperature control, personal hygiene, potential for cross contamination, etc.)

Reason:

The safe handling of food requires strict control over the critical steps in the preparation process to minimize the potential for contamination of food products and/or the rapid growth of microorganisms, which can cause foodborne illness.

Problem 3:

Temperatures of foods were not checked after cooking, during the cooling process, or reheating.

Corrective Action:

Internal food temperatures should be checked with a sanitized, calibrated metal stemmed thermometer, after cooking, during the cooling process and when reheating.

Reason:

Verification of internal food temperatures with a sanitized, metal stemmed thermometer is the only way to ensure that food products reach required temperatures at the critical points in the preparation process to prevent the growth of microorganisms.

**CHURCH POTLUCK
PROBLEMS/RECOMMENDATIONS
APRIL 2000
PAGE TWO**

Problem 4:

Food items were refrigerated in large quantities and in such a way (whole turkey, tightly sealed containers) to allow the foods to remain at unsafe temperatures for extended periods of time

Corrective Action:

Internal food temperatures should be checked with a sanitized, calibrated metal stemmed thermometer. All potentially hazardous, prepared foods should be cooled to an internal temperature of 70 degrees F or below within 2 hours and 41 degrees F or below within an additional 4 hours. Large items (i.e. meat) should be reduced in size; shallow (less than 4 inches) containers should be utilized along with quick chilling methods to facilitate cooling of potentially hazardous foods.

Reason:

Since any temperature between 41 degrees F and 140 degrees F present a hazard to public health in terms of microbial growth, food must pass through the critical temperature zone as little and as quickly as possible to minimize the potential for microbial growth. *Clostridium perfringens* is associated with outbreaks where improper cooling and/or reheating of foods, especially meat products, occurred.

Problem 5:

Potentially hazardous foods (turkey with gravy, and stuffing) were reheated slowly over an extended period of time (approximately six (6) hours) prior to service.

Corrective Action:

Previously prepared, potentially hazardous foods should be rapidly reheated to a minimum temperature of 165 degrees Fahrenheit.

Reason:

Rapidly reheating foods prevents the food items from remaining at unsafe temperatures for extended periods of time. The minimum temperature of 165 degrees Fahrenheit is sufficient to destroy most microorganisms, which may have been introduced into the product during the preparation process.

Appendix D

Epidemiological Questionnaire

DATE AND TIME OF INTERVIEW: _____ NUMBER _____

INITIAL REPORTER: _____

LAST NAME _____ FIRST NAME _____

ADDRESS _____ CITY _____

PHONE _____ WORK PHONE: _____

OCCUPATION _____ DIET _____

ANY UNDERLYING HEALTH CONDITION? _____

D.O.B. _____ AGE _____ IF UNDER 2 ENTER AGE IN MONTHS _____ SEX (M F) _____

SICK IN THE PAST WEEK? _____ MEDICATIONS? _____ GI SYMPTOMS? _____

REQUIRED MEDICAL AID? YES OR NO

DOCTOR WHO _____ SEE DOCTOR, YES OR NO

HOSPITALIZED YES OR NO, WHERE _____

DIAGNOSIS _____

DATE OF ONSET OF SYMPTOMS _____
<MM/DD/YY>

HOUR OF ONSET OF SYMPTOMS _____
MILITARY TIME

HOW LONG DID SYMPTOMS PERSIST IN HOURS OR DAYS? _____
HOURS OR DAYS

DATE ATE 1 _____ TIME ATE 1 _____ DATE ATE 2 _____ TIME ATE 2 _____
<MM/DD/YY> MILITARY TIME <MM/DD/YY> MILITARY TIME

ANSWER ALL QUESTIONS WITH A YES OR NO, NUMBER ALL OCCURRENCE QUESTIONS IN ORDER OF APPEARANCE OF SYMPTOMS, OCCUR DATE, OCCUR TIME, DURATION

NAUSEA <Y> _____ NAUSOCCUR ## _____

NAUSDATE _____ NAUSTIME _____ NAUSDURA _____
MM/DD/YY MILITARY TIME HOURS/DAYS

VOMITING <Y> _____ VOMITOCCUR ## _____

VOMIDATE _____ VOMITIME _____ VOMIDURA _____
MM/DD/YY MILITARY TIME HOURS/DAYS

MOUTHBURN <Y> _____ MOUTHOCUR ## _____

MOUTDATE _____ MOUTTIME _____ MOUTDURA _____
MM/DD/YY MILITARY TIME HOURS/DAYS

DEHYDRATE <Y> _____ DEHYOCCUR ## _____

DEHYDATE _____ DEHYTIME _____ DEHYDURA _____
MM/DD/YY MILITARY TIME HOURS/DAYS

PROSTRATION <Y> _____ PROSTOCCUR ## _____

PROSDATE _____ PROSTIME _____ PROSDURA _____
MM/DD/YY MILITARY TIME HOURS/DAYS

THIRST <Y> _____ THIRSOCCUR ## _____

THIRDATE _____ THIRTIME _____ THIRDURA _____
MM/DD/YY MILITARY TIME HOURS/DAYS

WEIGHTLOSS <Y> _____ WEIGHOCCUR ## _____

WEIGHDATE _____ WEIGTIME _____ WEIGDURA _____
MM/DD/YY MILITARY TIME HOURS/DAYS

FOOD ITEMS:

DAY 1 DATE _____

BREAKFAST

LUNCH

DINNER

DAY 2 DATE _____

BREAKFAST

LUNCH

DINNER

MCHENRY COUNTY DEPARTMENT OF HEALTH

7) NAMES AND PHONE NUMBERS OF PEOPLE WHO ATE WITH YOU AT EVENT.

A) _____
LAST NAME FIRST NAME PHONE NUMBER

B) _____
LAST NAME FIRST NAME PHONE NUMBER

C) _____
LAST NAME FIRST NAME PHONE NUMBER

D) _____
LAST NAME FIRST NAME PHONE NUMBER

Potluck Foods/Foodbourne Possibilities:

1 Apple Pie Yes _____ No _____

2 Deviled Eggs Yes _____ No _____

3. Fruit Salad Yes _____ No _____

4. Cake Yes _____ No _____

5. Vegetable Cassarole - Carrots/broccoli
Yes _____ No _____

6. Turkey Yes _____ No _____

7. Dressing Yes _____ No _____

8 Mashed Potatoes Yes _____ No _____

9. Green Jello Salad/with bananas Yes _____ No _____

10. Orange Jello Salad Yes _____ No _____

11. Indoor S'mores Yes _____ No _____

12 Gravy Yes _____ No _____

13. Rolls Yes _____ No _____

14. Cookies Yes _____ No _____

Appendix E

References

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